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THE BRIEF

Summer 2010

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Editor's Welcome

Hello! Please allow me to introduce myself. My name is Jim Reynolds and I am the new Meteorologist-in-Charge of the Center Weather Service Unit (CWSU) in the ZAB ARTCC. To the position, I bring over 16 years of National Weather Service experience, many of which were spent managing aviation programs across six states. Additionally, I earned my private pilot's license at Falcon Field in Mesa, Arizona in 1992. Because I have spent many years living and working in the southwest U.S., I believe my background and talents are well-suited to the challenges of providing the best weather information possible to all of our direct FAA partners, along with the rest of my CWSU team members. If we haven't already met somewhere in the ARTCC, I look forward to finally meeting you. If you haven't had the chance to attend our stand-up briefings at 7:30 am and 3:30 pm, or have not yet been by for a tour, please drop by some time and we will show you around.

For those of you that are new to ZAB, the goal of this newsletter is to increase the exchange of information between the people of the ARTCC and the CWSU. From our end, we will do this by focusing on seasonal weather impacts on air traffic, as well as any changes in our operations that we hope will be helpful to you. In order to round out the perspective of all involved in the work at ZAB, we have added a new section to The Brief called "Controller's Corner". In this section, we will post articles written by ZAB ARTCC staff members to highlight miscellaneous developments at the Center. I encourage you to submit short articles to me at james.reynolds@noaa.gov to be included in future quarterly editions of this newsletter.

Because leadership is an important quality we can all display and utilize in our daily work, we have added another new section to the newsletter called "Flight Leader". In this section, we will highlight selected leadership readings. For the Summer 2010 issue of The Brief, we will take a look at the book entitled "It's Your Ship", by Captain D. Abrashoff.

I hope you enjoy the latest version of our newsletter. It is through your feedback and suggestions that we will be able to improve the quality of this publication. I look forward to hearing from you and working with you.

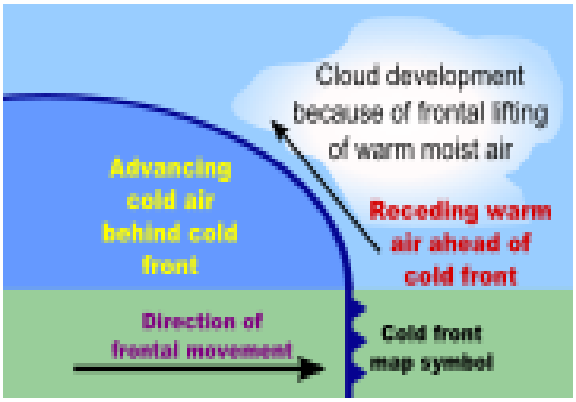
Best regards, Jim

ZAB Thunderstorms – Dynamic or "Monsoonal"

By Neil Haley, CWSU Meteorologist

Thunderstorms often times develop through the cruising altitudes for many airplanes. This causes air traffic to often times divert around thunderstorms, or seek an alternate route. There are 2 types of thunderstorms over ZAB, Monsoonal or Dynamic. Each type has its own unique challenges for ZAB Air Traffic Controllers.

Dynamic thunderstorms are caused by changes in the atmosphere that force moisture to be lifted. A cold front or dry line are forcing mechanisms that can help trigger thunderstorm development. Dynamic thunderstorms are most likely to occur over the eastern New Mexico plains into West Texas. These thunderstorms usually occur between March and early June, and again from September into October when the winds aloft are moderate or greater. These storms are capable of producing very large hail, tornadoes, and can move at speeds up to 45kts. These storms can have very rapid vertical development, with tops reaching FL550-600.

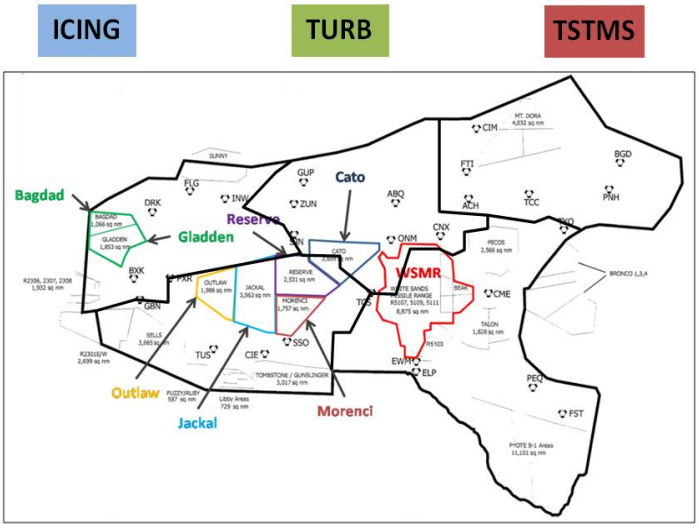


"Monsoon" thunderstorms: The dictionary defines Monsoon as a persistent shift in the wind between water and adjoining land. ZAB's monsoon thunderstorms occur during the summer months (late June through mid September). The winds aloft decrease significantly, and low level moisture increases. The moisture increase over ZAB is a result of a shift in the winds through a deep layer that allows moisture to arrive from the Pacific Ocean and the Gulf of Mexico, hence the term "Monsoon". Thunderstorm development during this season usually initiates over the higher terrain as daytime heating interacts with this increased atmospheric moisture. Thunderstorms that develop in this environment are typically: slower moving, do not extend as far vertically, and generally do not produce as much severe weather as dynamic storms (rarely are large hail and tornadoes observed with these types of storms). However, due to the slower movement of these storms, they are capable of producing heavy rain which can create outflow boundaries or gust fronts. Outflow boundary winds are mostly in the 25-50kt range but can be as high as 90kts. Strong winds emanating from these storms can fan out, pick up, and transport lots of dust which can significantly reduce visibilities. Slow moving storms concentrated over, or near a busy airport hub such as PHX can result in holding of aircraft and eventual diverts to alternate airports.

CWSU Products and Services

By Jim Reynolds and Neil Haley, CWSU Meteorologists

In an effort to help with the PIREP solicitation process, we will soon be instituting a new graphic to our stand-up briefings at 7:30 am and 3:30 pm. While PIREP solicitation is critical throughout the ZAB area at all times, this new graphic will enable us to draw attention to areas that are, or may become, troublesome throughout a shift. Specifically, we will highlight areas where icing, turbulence, or thunderstorms are occurring or are expected to occur. To make life easier for area supervisor's, specialty areas will be clearly identified, as will be special use airspace and VORTACs.



Third Southwest Aviation Weather Safety Workshop a Success

By David Craft, Weather Forecast Office Albuquerque Meteorologist

ZAB CWSU teamed up with the NWS Forecast Offices in Albuquerque and Phoenix to organize SAWS III, which was held in Phoenix on April 23rd and 24th. The goal of the workshop was to bring together the aviation and weather forecasting communities to promote aviation safety and productivity through improved weather awareness and forecasting services. The event included an Aviator and Controller Weather Workshop, as well as an Aviation Weather Forecasting Workshop.

Nearly 90 people from throughout the Southwest US participated in the 2-day event. Presentations were provided by the Aviation Weather Center, Embry-Riddle Aeronautical University, Davis-Monthan AFB, the Scottsdale Flight Standards District Office, Southwest Airlines, US Airways, the Cooperative Program for Operational Meteorology, and several different NWS Forecast Offices. A variety of topics were covered including: statistics on the causes of GA accidents, hot topics from the FAA Safety Team, thunderstorm and volcanic ash avoidance, effective use of NWS TAFs and aviation forecast discussions, limitations of aircraft-mounted weather radars, Internet access and interpretation of weather satellite imagery, and in-flight cloud recognition. Pilots participating in this workshop also received FAA WINGS Pilot Proficiency Program credit.

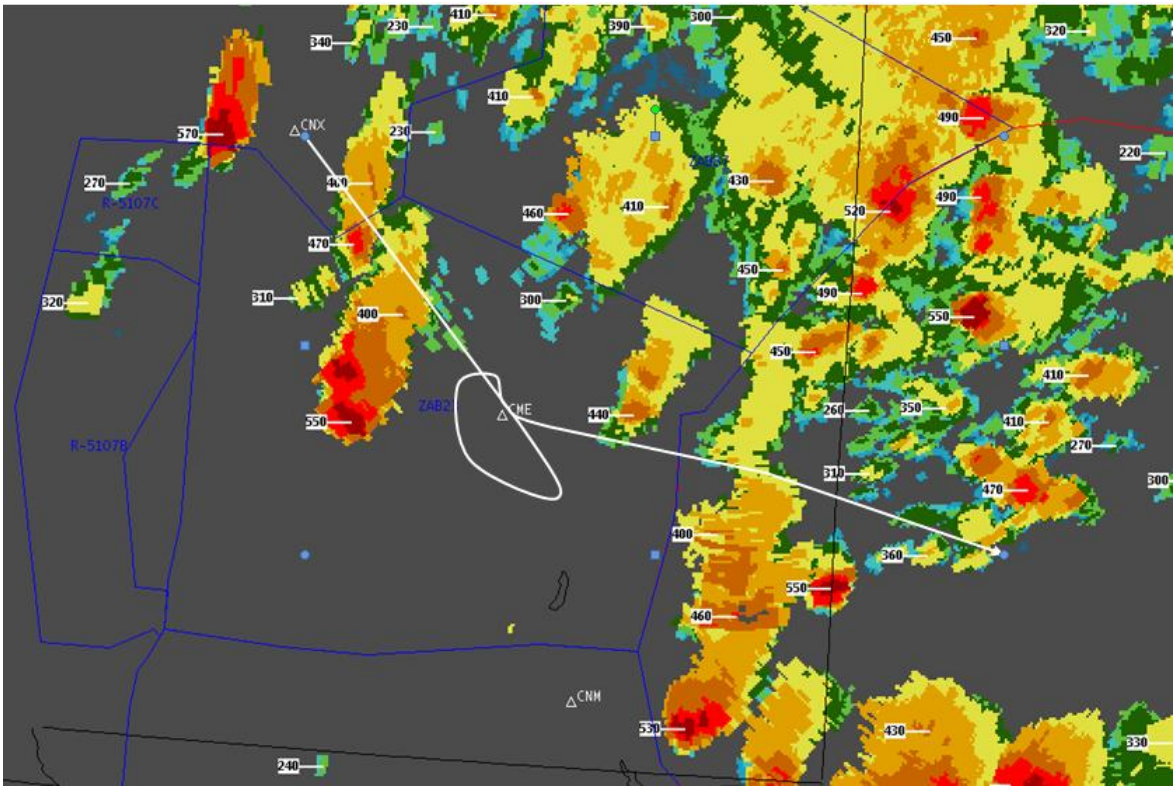
ZAB CWSU will again collaborate with weather forecast offices in Albuquerque and Phoenix to organize SAWS IV, which is being planned for October 2011 in Albuquerque.

Controller's Corner – On The Fly Creativity

By Vern Payne, Supervisor- Southeast Specialty

On May 14, 2010 from 1805Z to 1822Z, scattered thunderstorms were in sector 23 with organized lines of thunderstorms just east of sector 23 in ZFW airspace. DAL124 B767/Q was southeast bound to ATL, while BEAST01 and STRMY0, both 4/F16/I, were southeast bound to DYS. The IAH West playbook, with a simultaneous DFW UKW playbook were in effect, which both routed aircraft through sector 23.

Two southeast specialty controllers were working sector 23 with unusual weather and aircraft routings. Thunderstorms were west and southeast of CNX with tops to FL570 north of CME and a more organized line east of sector 23 in ZFW with tops to FL550. Weather routes to DFW/DAL and IAH/HOU increased the volume of flights in sector 23, and complexity was added by the deviations around the weather in sector 23.Two flights of F16 with 4 in each flight (BEAST01 and STRMY01), both negative RVSM, were trying to pick their way through the weather, but none of the 8 F16s had weather Radar. BEAST01 was the first to enter sector 23 at FL270. BEAST01 requested FL370 negative RVSM. There were multiple crossing and deviating aircraft above FL270. A radar controller described the weather as displayed on the DSR and advised BEAST01 of the weather conditions at Holloman AFB to the southwest as an alternate destination.



May 14, 2010 cloud top depiction and route of flight from 1805Z to 1822Z near sector 23

DAL124 was now on frequency at FL390 and the radar controller asked DAL124 about his weather radar capabilities. The controller proposed to BEAST01 that DAL124 lead him through the weather. By this time, STRMY01 was also on frequency and had heard the idea. BEAST01, STRMY01 and DAL124 agreed to the idea and BEAST01 was given vectors to allow DAL124 to get in the lead. Both flights of F16's were given climbs as other overflight traffic allowed. STRMY01 advised they could accept MARSA with BEAST01, and once MARSA was declared, the two flights joined up while climbing to FL370, 10 miles in trail of DAL124. The F16 flight maintained the 10 miles in trail and followed DAL124 with their air to air radar.

Sector to Sector and FLM to FLM coordination was accomplished with ZFW for the negative RVSM and MARSA as well as explaining what the plan was. The radar associate position was instrumental in accomplishing the coordination for this situation as well as assisting in coordinating all the other deviations that were occurring with other overflights. All during the episode, numerous other aircraft were transiting the sector and each had their own requests for deviations and weather descriptions. The radar controllers did an outstanding job of remaining calm, collected, and concise while creating an innovative, safe solution that utilized a number of ATC separation rules and coordination procedures, all the while overcoming VHF and UHF transmission interference and thunderstorm-induced UHF static.

Once the aircraft were in ZFW and past the thunderstorms, the F16's were descended and the flights broke apart into their original configuration. The F16's landed at DYS while DAL124 continued on to ATL. All parties involved demonstrated a high level of competence and professionalism.

Controller's Corner – From the 510 Shop

By Tom Mackenzie, Operations Manager

ERAM is the driving force in our office right now, with transition testing occurring 2 nights per week. We also have numerous telcons and meetings to discuss the progress of the program. There currently is not an ERAM waterfall in place, however I have been told to expect an IOC date of sometime in early 2011. We have an active partnership with NATCA in which all ERAM issues are worked together. Some other issues not related to ERAM that might be of interest are: PIV (new employee badges), Automated Electronic Defibrillators, Facility Security Risk Management (FSRM) project, Curtain Wall project, and MOD-4 (the old control room) project.

Controller's Corner – SPARC

By Susan Anderson, Performance Management Supervisor - North Specialty

Supervisors and managers from across the FAA have come together to lend a subject matter expertise to aviation research projects driving the future of air traffic control. The Strategic Planning Advisory Review Cadre is a cross-ATO group that includes front line managers, supervisory traffic management coordinators and operations managers from En Route, Terminal, System Operations, Technical Operations and Service Centers. The SPARC members at Albuquerque ARTCC are Susan Anderson and Ken Reynolds.

The group's 75 volunteer members provide operational focus for Next Generation Air Transportation System research and develop and test NextGen concepts. Members are involved in human-in-the-loop testing and high-level concept review groups. SPARC works with the FAA's William J. Hughes Technical Center in Atlantic City, N.J., Massachusetts Institute of Technology's Lincoln Laboratory, NASA's Ames Research Center, MITRE Corporation and Embry Riddle Aeronautical University.

Controller's Corner – ATLDP

By Elizabeth Guerrie, Controller - Southwest Specialty

The Air Traffic Leadership Development Program (ATLDP) is a program for people wanting to become leaders. The program has many activities that you can choose to do. Some of the choices are to read a book from a list of suggestions or take a class from a list provided. Some of the books and classes are recommended more than others. Upon completing these activities, you are required to shadow a supervisor from a different specialty area for an 8 hour shift. You must also participate in an 8 hour shift simulation. The entire program is to be completed in a 6 month period. From these activities, I learned that a leader is more than just telling someone what to do. A leader sets an example that others want to follow. A leader is someone who takes the initiative and gets things done. If you want more information about ATLDP, please ask me about my experience in the program.

Flight Leader

By Jim Reynolds, CWSU Meteorologist

In the book entitled "It's Your Ship" by former Commander of the Naval destroyer USS Benfold, Captain D. Michael Abrashoff details numerous experiences onboard the USS Benfold from 1997-1999 that exemplify many of his successful, and some not so successful, innovative management techniques. Beginning with an emphasis that puts crew safety and morale at the top of his priority list, Captain Abrashoff explains how he helped to develop "the best damn ship in the Navy" during his 20 month command. While this statement sounds cocky and arrogant, the Captain backs up this claim by revealing some of the ways he dramatically improved the battle-readiness of his ship that caused the USS Benfold to be considered the go-to ship during the Persian Gulf War. In the end, Captain Abrashoff's leadership techniques, and the overwhelming response by his crew to his techniques, resulted in the implementation of a number of his "best practices" Navy-wide. Additionally, the success story of Captain Abrashoff's efforts led to retention rates for sailors onboard the ship that were two and a half times above the average for the entire Navy. For those of you that are looking to stimulate your creative side with regard to solving old problems, "It's Your Ship" is a must-read.

How Ancient Societies Kept Cool

By Tom Hall, CWSU Meteorologist (excerpts from N.S. Gill: Keeping Cool – Ideas from Ancient History on Keeping Cool)

The period known as the "Dog Days" of summer occurs from early July into mid-August. The Romans gave this period the name "dies canincula" or dog days because the dog star Sirius rises and sets with the sun during this time. They conjectured that the combined effect of the star and the sun was what made it so oppressively warm and humid. - From www.intellicast.com/almanac/jul/ Intellicast

Days of oppressive temperatures and humidity, with heat indices around 100° F, suddenly surrender to intense, evening lightning or hail storms. Ice pellet pocks texturize windows and cars. Tree detritus lines every park path. Rivers overflow. Or it's the opposite: the lakes dry up completely and drought restrictions are in effect. That's summer -- at least where I live. Water has always helped people keep cool in the summer, but then as now some cooling systems were only available to the rich or powerful.

Greco-Roman Snow - The colorful, excessive, Emperor Elagabalus built a mountain of snow in his summer garden as an early, extravagant attempt at keeping cool.

Early Snow Cones? - Even normal Greeks and Roman bought snow and ice imported on donkey trains. Few could afford private ice houses. Most urban residents bought it at snow shops. In Rome deep pits were filled with snow and covered with straw. Water melted and ran through forming a bottom layer of ice that sold at a premium. Snow could be more expensive than wine.

Ice

- China - In the third and fourth centuries B.C., Chou emperors had a staff of 94 providing ice service.
- Near East - There were ice houses in the Near East as early as 1700 B.C. when Zimri-Lin, a ruler of Mari (an important city on the Euphrates), boasted of having constructed the first ice house on the Euphrates.
- Greece - Alexander the Great built the first Greek ice house.

Shade - For some, like the Roman Horace, who in *Epistles* I.7 1-7, pleads health reasons for his prolonged vacation, an extended heat-avoiding trip to the country was an option. Since there wasn't enough naturally occurring shade in what is now the general area of Baghdad, the Akkadian monarch Sargon had an attendant hold a sunshade over him, as depicted on a victory monument. The idea spread westward where it was particularly popular in Egypt, and eastward to India. In Rome the idea became democratized. Many urban women soon sported parasols or what they called *umbracula* -- light cloth stretched over a wooden frame.

Baths/Showers - For the ancients, bathing was an important, enjoyable daily activity. After strenuous exercise, a Greek athlete could expect to wash up and cool down in a shower with piped-in water emerging from an artistic animal's mouth. While there were ample natural bodies of waters, baths were popular. Besides the well-known Roman baths, a 4500 year old one has been uncovered in Mohenjo-Daro, 39' x 23' and ten feet deep. It was lined with bricks and bitumen.

Water Cooling

- In the second century, Athenaeus described an Indian practice of putting water on the roofs at night so it would be cooled.
- Tomb paintings depict Egyptian slaves fanning large storage jars made of porous clay. Through evaporation, what remained inside was chilled.
- Also in Egypt, according to *Panati's Extraordinary Origins of Everyday Things*, women placed shallow clay trays of water on straw-beds. Evaporation from top and sides combined with the drop in night temperatures froze the water.

The salient feature of the phenomenon lies in the air's low humidity, permitting evaporation, or sweating, which leads to cooling.